

Application Serial No.: 10/016,713
Attorney Docket No.: 0190104

REMARKS

This is in response to the *Non-Final* Office Action, dated March 22, 2005, where the Examiner has rejected claims 4-6, 8-10 and 33-34. Reconsideration and allowance of pending claims 4-6, 8-10 and 33-34 in view of the following remarks are respectfully requested.

A. Rejection of Claims 4-6 and 8 under 35 USC §102(b)

The Examiner has rejected claims 4-6 and 8, under 35 USC §102(b), as being anticipated by U.S. Patent Number 5,238,856 to Tokumitsu ("Tokumitsu"). For the reasons discussed below, Applicant respectfully submits that independent claim 4 is patentably distinguishable over Tokumitsu.

As explained on page 11, lines 9-18 of the present application:

"One undesirable artifact of the exposure process is the relatively poor resolving power of the micro-lens suitable material itself. This means that as the micro-lens suitable material is subjected to a lens formation pattern, some amount of bleeding will occur. The lens formation pattern must accommodate this inherent bleeding phenomenon. Accommodation of the bleeding may be accomplished by making the rectangular shapes 20 somewhat smaller than the outer perimeter of the boundary region 5 encompassing each active sensing region 10. This setback precludes the formation of micro-lenses that occupy the entire area defined by the boundary region 5. This results in a diminished efficiency for any micro-lens array fabricated using traditional techniques." (Emphasis added.)

To this end, the present application utilizes a novel process wherein the micro-lenses are formed in two or more stages, while as described in conjunction with Fig. 6 of the present application, due to the bleeding phenomenon that occurs during processing of the micro-lens suitable material deposited on the semiconductive substrate, a setback 60 is introduced at the boundary of the micro-lenses to ensure that the micro-lens suitable material will form distinct

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islands after any unwanted material is removed. (Page 12, lines 18-27.) Furthermore, the present application reads:

Further distinguishing the present invention according to this example of embodiment, each of these islands of micro-lens suitable material occupies an area within the boundary region perimeter that is larger than any exposure resolution setback ordinarily associated with imparting lens formation patterns onto the micro-lens suitable material in a single pass. (Page 7, lines 8-12.)

According to this example embodiment, each island of micro-lens suitable material occupies an area within a boundary perimeter surrounding the active region that is greater than that associated with imparting lens formation patterns onto the micro-lens suitable material in a single pass. (Page 7, lines 24-27.)

Claim 4 recites “wherein the first lens formation pattern further includes a first setback from the boundary for each of the first plurality of micro-lenses to be formed; ... wherein the second lens formation pattern further includes a second setback from the boundary for each of the second plurality of micro-lenses to be formed.” In response to applicant’s statements that Tokumitsu fails to disclose, teach or suggest the above limitations of claim 4, and that, in fact, Tokumitsu teaches away, the Examiner asserts that Tokumitsu teaches the above limitations as a non-preferred embodiment. Applicant respectfully but strongly disagrees with the Examiner’s reading of the above limitations of claim 4 and the disclosure of Tokumitsu.

The Examiner states that “Tokumitsu teaches as a non-preferred embodiment of the invention, modifying the shape of the micro-lens suitable material (rounding off the corner angels, for example) to avoid connecting the lenses with each other.” Applicant respectfully submits that “rounding off the corner angels to avoid connecting the lenses with each other” does not remotely teach or disclose either “imparting a first lens formation pattern onto the first coat of micro-lens suitable material, wherein the first lens formation pattern includes a boundary for

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each of a first plurality of micro-lenses to be formed, and wherein the first lens formation pattern further includes a first setback from the boundary for each of the first plurality of micro-lenses to be formed,” or “imparting a second lens formation pattern to the second coat of micro-lens suitable material, wherein the second lens formation pattern includes a boundary for each of a second plurality of micro-lenses to be formed, and wherein the second lens formation pattern further includes a second setback from the boundary for each of the second plurality of micro-lenses to be formed.” Indeed, Tokumitsu’s step of rounding off the corner angles occurs after imparting a lens formation pattern in Tokumitsu, and it is needed because Tokumitsu fails to apply a setback from the boundary for each of the micro-lenses to be formed. In other words, Tokumitsu’s step of rounding off must occur after the lens formation and is not part of imparting a lens formation pattern. Therefore, the rounding off step of Tokumitsu cannot and does not teach one of ordinary skill in the art to impart a lens formation pattern having a setback, as claimed in claim 4. It is unclear to applicant as to how the Examiner interprets imparting a lens formation pattern having a setback to be taught by a disclosure for rounding off or breaking off the corner angles after formation.

Further, applicant respectfully submits that Tokumitsu’s step of rounding off teaches away from introducing a setback in the lens formation pattern, as recited in claim 4, because it is necessary for Tokumitsu to round off or break off the corner angles so as to avoid connecting the lenses with each other, because Tokumitsu does not impart a lens formation pattern having a setback, as recited in claim 4.

For the foregoing reasons, Applicant respectfully submits that the present invention as defined by independent claim 4, as amended, is not taught, disclosed, or suggested by Tokumitsu.

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Thus, independent claim 4 is patentably distinguishable over Tokumitsu. As such, claims 5-6 and 8 depending from amended independent claim 4 are, *a fortiori*, also patentably distinguishable over Tokumitsu for at least the reasons presented above and also for additional limitations contained in each dependent claim.

B. Rejection of Claims 10 and 33-34 under 35 USC §103(a)

The Examiner has rejected claims 10 and 33-34, under 35 USC §103(a), as being obvious with respect to Tokumitsu in view of U.S. Patent Number 5,604,077 to Kono, et al. ("Kono"). Applicant respectfully submits that claims 10 and 33-34 depend from independent claim 4 and thus, claims 10 and 33-34 should be allowed at least for the same reasons discussed above in conjunction with patentability of independent claim 4. Further, claim 9, which has not been rejected by the Examiner, should also be allowed, because claim 9 depends from independent claim 4.

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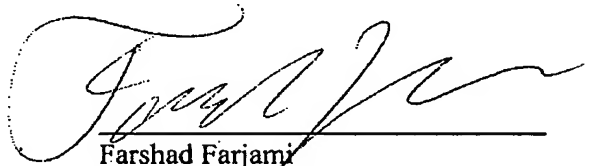
C. Conclusion

For all the foregoing reasons, an early Notice of Allowance directed to claims 4-6, 8-10 and 33-34 pending in the present application is respectfully requested.

Respectfully Submitted,
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11/7/05



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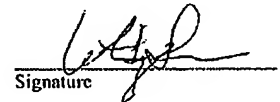
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